

2. Remarks/Discussion of Issues

Claim Summary

By the Amendment, claim 7 has been canceled, without prejudice and without disclaimer of the subject matter. Claims 1-6 and 8-11 have been amended to address informalities in the claim language and to more clearly define the invention. Claims 12-15 have been submitted for the Examiner's consideration. No new matter has been added.

Claims 1-6 and 8-15 remain pending in the application. Applicants respectfully submit that all pending claims are in condition for allowance.

Rejection under 35 U.S.C. § 112, Second Paragraph – Claims 7-10

The Office Action of February 28, 2008, rejects claims 7-10 under 35 U.S.C. § 112, second paragraph, for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. *See* Office Action, p. 2.

By this Amendment, Applicants have canceled claim 7, and submitted new claim 14 in its place, which is an apparatus claims. Also, claims 9 and 10 have been revised to clarify that the acquisition unit comprises a sonography applicator or an X-ray source/detector, respectively. Accordingly, Applicants respectfully request the Examiner to withdraw the rejections under 35 U.S.C. § 112, second paragraph.

Rejection under 35 U.S.C. § 101 – Claim 11

In the Office Action, dated February 28, 2008, claim 11 is rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. Without admitting to the propriety of the Examiner's rejection, Applicants have amended claim 11 in independent form to recite a computer readable medium. Applicants respectfully submit that claim 11 is directed to statutory subject matter, and thus the rejection of claim 11 35 U.S.C. § 101 is moot. Accordingly, Applicants respectfully request the Examiner to withdraw the rejection under 35 U.S.C. § 101.

Rejections under 35 U.S.C. § 102 – Claims 1-7, 11

In the Office Action, dated February 28, 2008, claims 1-7 and 11 are rejected under 35 U.S.C. § 102(b) as being unpatentable over et al. SHEN et al., "Differential Volume Rendering: A Fast Volume Visualization Technique for Flow Animation," IEEE, October 1994, pages 180-197.

Applicants rely at least on the following standards with regard to proper rejections under 35 U.S.C. § 102. Notably, anticipation requires that each and every element of the claimed invention be disclosed in a single prior art reference. See, e.g., *In re Paulsen*, 30 F.3d 1475, 31 USPQ2d 1671 (Fed. Cir. 1994); *In re Spada*, 911 F.2d 705, 15 USPQ2d 1655 (Fed. Cir. 1990); *W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303, 313 (Fed. Cir. 1983). Alternatively, anticipation requires that each and every element of the claimed invention be embodied in a single prior art device or practice. See, e.g., *Minnesota Min. & Mfg. Co. v. Johnson & Johnson Orthopaedics, Inc.*, 976 F.2d 1559, 24 USPQ2d 1321 (Fed. Cir. 1992). For anticipation, there must be no difference between the claimed invention and the reference disclosure, as viewed by a person of ordinary skill in the field of the invention. See, e.g., *Scripps Clinic & Res. Found. v. Genentech, Inc.*, 927 F.2d 1565, 18 USPQ2d 1001 (Fed. Cir. 1991).

Applicants' silence on certain aspects of the rejection is by no means a concession as to their propriety. Rather, because the applied art fails to disclose at least one feature of the claims, for at least the reasons discussed below, Applicants respectfully submit that the rejections are improper and should be withdrawn.

Claims 1-6

Independent claim 1 recites, in part:

"...a) determining relevant first volume values of a first volume image, which are relevant to visualization of the first volume image, from first volume values of said first volume; b) storing first voxels with which the relevant first volume values are associated; c) deriving a first two-dimensional image from the stored first voxels of the first volume image; d) determining relevant second volume values of a second volume image, which are relevant to visualization of the second volume image, from second volume values which are associated with stored first voxels or with

with stored first voxels or with voxels neighboring said stored first voxels; e) storing second voxels with which the relevant second volume values are associated; and f) deriving a second two-dimensional image from the stored second voxels of the second volume image.”

SHEN et al. does not disclose determining relevant first volume values of a first volume image, which are relevant to visualization of the first volume image or deriving a first two-dimensional image from the stored first voxels of the first volume image. The Examiner asserts that these features are taught by utilizing a differential file that contains data paths of only changed elements. See Office Action, pp. 5-6 (referencing SHEN et al. pp. 181-182). However, the differential file maps changes between images, and therefore does not disclose determining first volume values relevant to visualization of a first volume image, or deriving a two-dimensional image from the relevant values (or the associated voxels).

Accordingly, because SHEN et al. does not disclose each and every feature of claim 1, withdrawal of the rejection under 35 U.S.C. § 102(b) based on SHEN et al. is respectfully requested. Claims 2-6 (as well as new claims 12-13) depend, directly or indirectly, from claim 1 and are therefore allowable for at least the reasons discussed with respect to claim 1, as well as in view of their additional recitations.

Claims 7, 11

Independent claim 7 has been canceled, and the subject matter has been substantially incorporated into newly submitted claim 14, which recites, in part:

“... an image processor for determining first volume values of a first volume image which are relevant to visualization of the first volume image, causing first voxels with which the relevant first volume values are associated to be stored in the memory, deriving a first two-dimensional image from the stored first voxels of the first volume image, determining second volume values of a second volume image which are relevant to visualization of the second volume image from volume values associated with stored first voxels or with voxels neighboring the stored first voxels, causing second voxels with which the relevant second volume values are associated to be stored in the memory, and deriving a second two-dimensional image from the stored second voxels of the second volume image.”

Claim 11 has been rewritten in independent form, reciting, in part:

"...a first determining code segment for determining relevant first volume values of a first volume image, which are relevant to visualization of the first volume image, from first volume values of the first volume image; a first deriving code segment for deriving a first two-dimensional image from first voxels corresponding to the relevant first volume values of the first volume image; a second determining code segment for determining relevant second volume values of a second volume image, which are relevant to visualization of the second volume image, from second volume values which are associated with the first voxels or with voxels neighboring said first voxels; and a second deriving code segment for deriving a second two-dimensional image from second voxels corresponding to the relevant second volume values of the second volume image."

SHEN et al. does not disclose determining relevant first volume values of a first volume image, which are relevant to visualization of the first volume image or deriving a first two-dimensional image from the first voxels of the first volume image. The Examiner asserts that these features are taught by utilizing a differential file that contains data paths of only changed elements. See Office Action, pp. 5-6 (referencing SHEN et al. pp. 181-182). However, the differential file maps changes between images, and therefore does not disclose determining first volume values relevant to visualization of a first volume image, or deriving a two-dimensional image from the relevant values (or the associated voxels).

Accordingly, because SHEN et al. does not disclose each and every feature of claims 11 and 14, withdrawal of the rejection under 35 U.S.C. § 102(b) based on SHEN et al. is respectfully requested.

Rejections under 35 U.S.C. § 103 – Claims 8-10

In the Office Action, dated February 28, 2008, claims 8 and 9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over et al. SHEN et al. in view of BRANDL et al. (U.S. Patent No. 6,450,962). Also, claim 10 is are rejected under 35 U.S.C. § 103(a) as being unpatentable over et al. SHEN et al. in view of GOTO et al. (U.S. Patent Application Publication No. 2004/0075658).

Claims 8-10 depend, directly or indirectly, from claim 14 and are therefore allowable for at least the reasons discussed with respect to claim 14, as well as in view of their additional recitations. Further, the Examiner relied on BRANDL et al. only to teach an acquisition unit, an ultra sound apparatus and/or a sonography applicator. The Examiner relied on GOTO et al. only to teach an X-ray source and an X-ray detector. Therefore, neither BRANDL et al. nor GOTO et al. cure the deficiencies of SHEN et al.

Conclusion

No other issues remaining, reconsideration and favorable action upon the claims 1-6 and 8-15 now pending in the application are requested.

If any points remain in issue that may best be resolved through a personal or telephonic interview, the Examiner is respectfully requested to contact the undersigned at the telephone number listed below.

Respectfully submitted on behalf of:
Phillips Electronics North America Corp.



by: Van C. Ernest
Registration No. 44,099

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VOLENTINE & WHITT, P.L.L.C.
One Freedom Square
11951 Freedom Drive, Suite 1260
Reston, Virginia 20190
Telephone No.: (571) 283.0720
Facsimile No.: (571) 283.0740